

Recovery Plan Action Status

Plan Name: Pallid Sturgeon

Plan Status: Final

Plan Date: 07-Nov-93

Lead Agency: USFWS

Lead Office: Yellowstone River Coordinator Office

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Pallid sturgeon (Scaphirhynchus albus)	1	1	Restore the diversity of riverine habitats by reconnecting cutoff features along the Missouri and Mississippi Rivers	Ongoing Current	FY 2000 - FY 2004		U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Fish and Wildlife Service, Wildlife Resources, Western Area Power Administration, U.S. Geological Survey, Missouri Department of Conservation, U.S. Fish and Wildlife Service, Fisheries Resource Division, Bureau of Reclamation , Corps of Engineers, USFWS Regional Office 3, USFWS Regional Office 4, U.S. Fish and Wildlife Regional Office 6, Mississippi Interstate Cooperative Resource Agreement, State Fisheries or Research Divisions	Acquisition, Acquisition: Easement, Acquisition: Exchange, Acquisition: Fee Title, Management, Management: Habitat Maintenance and Manipulation, Management: Land Use	Contract, Graduate Student, Internal Administrative, Internal Field Assistance, Internal Technical Assistance, Species Expert	Costs dependent upon numbers of restorations
Pallid sturgeon (Scaphirhynchus albus)	2	10	Conduct a Population Viability Analysis to determine appropriate recovery numbers	Planned			U.S. Fish and Wildlife Service, Ecological Services Division, University , USFWS Regional Office 8, U.S. Fish and Wildlife Regional Office 6, USFWS Fisheries and Federal Aid, USFWS Research Stations and Coop. Research Units	Research: Population Surveys	Labor type not yet selected	Efforts have been made to complete a PVA. However, much data are lacking for any PVA to be accurate.

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Pallid sturgeon (Scaphirhynchus albus)	2	11	Conduct trials to maximize survival of broodstock and progeny	Ongoing Current	Prior to FY 1995		Missouri Department of Conservation, USFWS Regional Office 8, U.S. Fish and Wildlife Regional Office 6, USFWS Fisheries and Federal Aid, USFWS Research Stations and Coop. Research Units	Research: Demographic Studies, Research: Dietary Studies, Research: Disease, Research: Environmental Contaminants, Research: Propagation	Contract, Graduate Student, Internal Field Assistance, Internal Technical Assistance, Species Expert	Survival of brood stock is high. Estimates of survival of stocked progeny is also adequate. Continual monitoring of stockign success will help identify which life stages are the most appropriate to stock.
Pallid sturgeon (Scaphirhynchus albus)	2	12	Develop cryopreservation techniques	Complete	Prior to FY 1995	FY 1995 - FY 1999	Missouri Department of Conservation, U.S. Fish and Wildlife Service, Fisheries Resource Division	Research: Propagation	Labor type not yet selected	The technique to cryopreserve broodstock sperm has been developed and is currently in use.
Pallid sturgeon (Scaphirhynchus albus)	2	13	Conduct reintroduction/augmentation programs in accordance with the stocking plan	Ongoing Current	FY 1995 - FY 1999		Western Area Power Administration, U.S. Geological Survey, Missouri Department of Conservation, U.S. Fish and Wildlife Service, Fisheries Resource Division, Corps of Engineers, State Fisheries or Research Divisions	Management: Population Monitoring, Management: Propagation, Management: Reintroduction	Labor type not yet selected	Pallid sturgeon have been and will continue to be stocked as defined in the augmentation plan.
Pallid sturgeon (Scaphirhynchus albus)	3	14	Determine the extent of parasitism and disease, and the degree of competition and predation by introduced fishes	Ongoing Not Current	Prior to FY 1995		USFWS Regional Office 8, U.S. Fish and Wildlife Regional Office 6, USFWS Fisheries and Federal Aid, USFWS Research Stations and Coop. Research Units, Mississippi Interstate Cooperative Resource Agreement, State Fisheries or Research Divisions	Research: Disease	Labor type not yet selected	Some limited studies have been conducted to address this task. However, difinitive results are lacking

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Pallid sturgeon (Scaphirhynchus albus)	3	15	Encourage and support publication of research, management, and other recovery-related information	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, University , USFWS Regional Office 3, USFWS Regional Office 4, U.S. Fish and Wildlife Regional Office 6, USFWS Fisheries and Federal Aid, USFWS Research Stations and Coop. Research Units, Mississippi Interstate Cooperative Resource Agreement, State Fisheries or Research Divisions	Other: Information and Education	Labor type not yet selected	Publication of funded research results is always encouraged. There are no specific fund targets to assist with publication costs
Pallid sturgeon (Scaphirhynchus albus)	1	16	Ensure water intakes and diversions are not adversely affecting pallid sturgeon populations	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Federal Energy Regulatory Commission, U.S. Fish and Wildlife Service, Law Enforcement Division, U.S. Fish and Wildlife Service, Fisheries Resource Division, Environmental Protection Agency , Bureau of Reclamation , Corps of Engineers, USFWS Regional Office 8, USFWS Regional Office 3, USFWS Regional Office 4, U.S. Fish and Wildlife Regional Office 6, State Fisheries or Research Divisions	Management: Habitat Maintenance and Manipulation	Contract	Costs dependent upon numbers of intakes or diversion needing modification

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Pallid sturgeon (Scaphirhynchus albus)	1	17	Work with States within the pallid sturgeon's range to temporarily place a moratorium on commercial fishing of all sturgeon species	Complete	Prior to FY 1995	FY 2011	U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Fish and Wildlife Service, Law Enforcement Division, U.S. Fish and Wildlife Service, Fisheries Resource Division, USFWS Regional Office 3, USFWS Regional Office 4, U.S. Fish and Wildlife Regional Office 6, State Fisheries or Research Divisions	Other: Law Enforcement, Other: Regulations	Labor type not yet selected	
Pallid sturgeon (Scaphirhynchus albus)	1	18	Work with States to develop a policy that will ensure fish assessment prior to introductions of new nonindigenous and exotic species to the Missouri and Mississippi Rivers	Unknown	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, USFWS Regional Office 3, USFWS Regional Office 4, U.S. Fish and Wildlife Regional Office 6, USFWS Fisheries and Federal Aid, Mississippi Interstate Cooperative Resource Agreement, State Fisheries or Research Divisions	Other: Regulations	Labor type not yet selected	
Pallid sturgeon (Scaphirhynchus albus)	1	19	Include the pallid sturgeon in Appendix 1 to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)	Planned	FY 2006		USFWS Regional Office 3, USFWS Regional Office 4, U.S. Fish and Wildlife Regional Office 6	Other: Regulations	Labor type not yet selected	

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Pallid sturgeon (Scaphirhynchus albus)	1	2	Implement operational alternatives for main stem Missouri River and tributary dams using simulation models that will emulate precontrol hydrographs	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Federal Energy Regulatory Commission, Western Area Power Administration, U.S. Fish and Wildlife Service, Law Enforcement Division, Missouri Department of Conservation, Bureau of Reclamation , Corps of Engineers, USFWS Regional Office 3, USFWS Regional Office 4, U.S. Fish and Wildlife Regional Office 6, USFWS Fisheries and Federal Aid, Food and Drug Administration, Mississippi Interstate Cooperative Resource Agreement	Management: Habitat Maintenance and Manipulation	Contract	No direct costs associated with modifying operations; however, indirect costs from losses to other beneficial uses will be incurred
Pallid sturgeon (Scaphirhynchus albus)	1	20	Remediate sources of environmental contaminants	Ongoing Not Current	FY 2011		U.S. Fish and Wildlife Service, Ecological Services Division, Environmental Protection Agency , USFWS Regional Office 3, USFWS Regional Office 4, U.S. Fish and Wildlife Regional Office 6	Other: Regulations	Labor type not yet selected	Costs unknown until implementation of Task 2.5.3

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Pallid sturgeon (Scaphirhynchus albus)	1	21	Provide protection for important habitat areas and needs of pallid sturgeon	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Fish and Wildlife Service, Wildlife Resources, Western Area Power Administration, Bureau of Reclamation , Corps of Engineers, USFWS Regional Office 3, USFWS Regional Office 4, U.S. Fish and Wildlife Regional Office 6, USFWS Fisheries and Federal Aid, Mississippi Interstate Cooperative Resource Agreement, State Fisheries or Research Divisions	Management: Land Use	Labor type not yet selected	Unknown costs for acquisition

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Pallid sturgeon (Scaphirhynchus albus)	1	22	Develop and distribute information and education materials on the plight of the pallid sturgeon and its ecosystem	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Federal Energy Regulatory Commission, U.S. Fish and Wildlife Service, Wildlife Resources, Western Area Power Administration, U.S. Fish and Wildlife Service, Law Enforcement Division, Missouri Department of Conservation, University , Environmental Protection Agency , Bureau of Reclamation , Corps of Engineers, USFWS Regional Office 8, USFWS Regional Office 3, USFWS Regional Office 4, U.S. Fish and Wildlife Regional Office 6, USFWS Fisheries and Federal Aid, USFWS Research Stations and Coop. Research Units, Food and Drug Administration, Mississippi Interstate Cooperative Resource Agreement, State Fisheries or Research Divisions	Other: Information and Education	Labor type not yet selected	

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Pallid sturgeon (Scaphirhynchus albus)	1	23	Collect pallid sturgeon broodstock from the wild and maintain refugia at three locations	Ongoing Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Missouri Department of Conservation, Bureau of Reclamation , Corps of Engineers, USFWS Regional Office 3, USFWS Regional Office 4, U.S. Fish and Wildlife Regional Office 6, USFWS Fisheries and Federal Aid, State Fisheries or Research Divisions	Management: Propagation	Labor type not yet selected	Costs represent only the amounts for collecting broodstock. See also Task 3.1.4
Pallid sturgeon (Scaphirhynchus albus)	1	23-1	Maintain future pallid sturgeon broodstock	Ongoing Current	FY 1995 - FY 1999		USFWS Fisheries and Federal Aid	Management: Propagation, Management: Reintroduction	Internal Field Assistance, Internal Technical Assistance, Species Expert	Gavins Point National Fish Hatchery currently supports the only existing brood stock program for Pallid Sturgeon
Pallid sturgeon (Scaphirhynchus albus)	1	24	Conduct investigations to determine age distribution, growth, and growth rates	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Western Area Power Administration, Bureau of Reclamation , Corps of Engineers, USFWS Regional Office 3, USFWS Regional Office 4, U.S. Fish and Wildlife Regional Office 6, USFWS Fisheries and Federal Aid, Mississippi Interstate Cooperative Resource Agreement, State Fisheries or Research Divisions	Research: Population Surveys	Contract	Cost includes \$10K per State

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Pallid sturgeon (Scaphirhynchus albus)	1	25	Conduct investigations to describe food habits and feeding behavior	Ongoing Current	Prior to FY 1995		Western Area Power Administration, U.S. Geological Survey, U.S. Fish and Wildlife Service, Fisheries Resource Division, Bureau of Reclamation , Corps of Engineers, USFWS Regional Office 3, USFWS Regional Office 4, U.S. Fish and Wildlife Regional Office 6, State Fisheries or Research Divisions	Research: Habitat Requirements	Labor type not yet selected	Cost includes \$10K per State
Pallid sturgeon (Scaphirhynchus albus)	1	26	Conduct investigations to better define macrohabitat requirements	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Western Area Power Administration, Bureau of Reclamation , Corps of Engineers, USFWS Regional Office 3, USFWS Regional Office 4, U.S. Fish and Wildlife Regional Office 6, USFWS Fisheries and Federal Aid, Mississippi Interstate Cooperative Resource Agreement, State Fisheries or Research Divisions	Research: Habitat Requirements	Contract	Costs support two studies at two locations. Combining 2.1.3, 2.1.4, and 2.1.5 could reduce costs

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Pallid sturgeon (Scaphirhynchus albus)	1	27	Conduct investigations to describe microhabitat characteristics of spawning, feeding, staging, and rearing areas	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Western Area Power Administration, Bureau of Reclamation , Corps of Engineers, USFWS Regional Office 3, USFWS Regional Office 4, U.S. Fish and Wildlife Regional Office 6, USFWS Fisheries and Federal Aid, Mississippi Interstate Cooperative Resource Agreement, State Fisheries or Research Divisions	Research: Habitat Requirements	Labor type not yet selected	
Pallid sturgeon (Scaphirhynchus albus)	1	28	Conduct investigations to describe movements and behaviors	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Western Area Power Administration, Bureau of Reclamation , Corps of Engineers, USFWS Regional Office 3, USFWS Regional Office 4, U.S. Fish and Wildlife Regional Office 6, USFWS Fisheries and Federal Aid, USFWS Research Stations and Coop. Research Units, Mississippi Interstate Cooperative Resource Agreement, State Fisheries or Research Divisions	Research: Migration	Labor type not yet selected	Costs support two studies at two locations. Combining 2.1.3, 2.1.4, and 2.1.5 could reduce costs

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Pallid sturgeon (Scaphirhynchus albus)	1	29	Obtain an artist's descriptive key of developing larvae and early juveniles of pallid sturgeon, shovelnose sturgeon, and shovelnose X pallid hybrids	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, University , U.S. Fish and Wildlife Regional Office 6, USFWS Fisheries and Federal Aid	Research: Other Information	Contract	
Pallid sturgeon (Scaphirhynchus albus)	1	3	Restore the natural temperature regime of the Missouri River	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Environmental Protection Agency , Bureau of Reclamation , Corps of Engineers, U.S. Fish and Wildlife Regional Office 6, USFWS Fisheries and Federal Aid	Management: Habitat Maintenance and Manipulation	Labor type not yet selected	Cost for upper-reservoir discharge unknown until implementation of Task 2.2.3
Pallid sturgeon (Scaphirhynchus albus)	1	30	Identify priority areas and needs for restoring the diversity of riverine floodplain habitats	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Fish and Wildlife Service, Wildlife Resources, Western Area Power Administration, Bureau of Reclamation , Corps of Engineers, USFWS Regional Office 3, USFWS Regional Office 4, U.S. Fish and Wildlife Regional Office 6, USFWS Fisheries and Federal Aid, Mississippi Interstate Cooperative Resource Agreement, State Fisheries or Research Divisions	Research: Habitat Requirements	Contract	

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Pallid sturgeon (Scaphirhynchus albus)	1	31	Develop simulation models for operation of main stem Missouri River and tributary dams to benefit pallid sturgeon and other uses	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Western Area Power Administration, Bureau of Reclamation, Corps of Engineers, U.S. Fish and Wildlife Regional Office 6, USFWS Fisheries and Federal Aid	Research: Habitat Requirements	Labor type not yet selected	Missouri River research is being conducted by the COE. Tributary research is being initiated by BR.
Pallid sturgeon (Scaphirhynchus albus)	1	32	Design multi-level releases from main stem Missouri River dams	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Western Area Power Administration, Bureau of Reclamation, Corps of Engineers, U.S. Fish and Wildlife Regional Office 6	Management: Habitat Maintenance and Manipulation	Labor type not yet selected	COE is responsible for main-stem Missouri dams in Montana and the Dakotas. BR is responsible for tributary dams.
Pallid sturgeon (Scaphirhynchus albus)	1	33	Determine the degree of genetic divergence between Scaphirhynchus species within the range of pallid sturgeon	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Corps of Engineers, USFWS Regional Office 3, USFWS Regional Office 4, U.S. Fish and Wildlife Regional Office 6, USFWS Fisheries and Federal Aid, Mississippi Interstate Cooperative Resource Agreement, State Fisheries or Research Divisions	Research: Genetics	Contract	States assist with collections of samples university and Service Geneticists are looking at the data

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Pallid sturgeon (Scaphirhynchus albus)	1	34	Identify genetically meaningful management units (stocks) of pallid sturgeon	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Corps of Engineers, USFWS Regional Office 3, USFWS Regional Office 4, U.S. Fish and Wildlife Regional Office 6, USFWS Fisheries and Federal Aid, Mississippi Interstate Cooperative Resource Agreement, State Fisheries or Research Divisions	Research: Genetics	Labor type not yet selected	Cost included in Task 2.3.1. States can assist with collections of samples
Pallid sturgeon (Scaphirhynchus albus)	1	35	Determine extent and management implications of hybridization between Scaphirhynchus species	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Corps of Engineers, USFWS Regional Office 3, USFWS Regional Office 4, U.S. Fish and Wildlife Regional Office 6, USFWS Fisheries and Federal Aid, Mississippi Interstate Cooperative Resource Agreement, State Fisheries or Research Divisions	Research: Genetics	Labor type not yet selected	States can assist with collections of samples data collected in 2.3.1 will need to be analyzed.

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Pallid sturgeon (Scaphirhynchus albus)	1	36	Establish sampling stations and monitor population status and trends	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Western Area Power Administration, Bureau of Reclamation, Corps of Engineers, USFWS Regional Office 3, USFWS Regional Office 4, U.S. Fish and Wildlife Regional Office 6, USFWS Fisheries and Federal Aid, Mississippi Interstate Cooperative Resource Agreement, State Fisheries or Research Divisions	Research: Demographic Studies, Research: Population Assessment, Research: Population Surveys	Contract, Internal Field Assistance, Internal Technical Assistance, Species Expert, Volunteer	COE is funding a population assessment program on the Missouri River
Pallid sturgeon (Scaphirhynchus albus)	1	36-1	Monitor pallid sturgeon demographics in Missouri River	Ongoing Current	Prior to FY 1995		Western Area Power Administration, U.S. Geological Survey, U.S. Fish and Wildlife Service, Fisheries Resource Division, Corps of Engineers, State Fisheries or Research Divisions	Research: Demographic Studies, Research: Population Assessment, Research: Population Surveys	Contract, Internal Field Assistance, Species Expert, Volunteer	When listed, population monitoring was limited to a few locations in the upper Missouri River. Today monitoring locations cover the entire river.
Pallid sturgeon (Scaphirhynchus albus)	1	36-2	Monitor pallid sturgeon demographics in the Mississippi River	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Corps of Engineers	Research: Demographic Studies, Research: Population Assessment, Research: Population Surveys	Contract, Internal Technical Assistance, Species Expert, Volunteer	When the species was listed in 1993, few survey locations existed in the Mississippi River. Today, there are limited sampling events occurring in the lower and middle Mississippi River.

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Pallid sturgeon (Scaphirhynchus albus)	1	37	Determine concentrations of organic and inorganic contaminants in pallid sturgeon, shovelnose sturgeon, their foods, and habitats	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Western Area Power Administration, U.S. Geological Survey, U.S. Fish and Wildlife Service, Fisheries Resource Division, Environmental Protection Agency, USFWS Regional Office 3, USFWS Regional Office 4, U.S. Fish and Wildlife Regional Office 6, USFWS Research Stations and Coop. Research Units, State Fisheries or Research Divisions	Research: Environmental Contaminants	Contract	Current efforts are in place to identify known contaminants and thresholds levels across the range of the species.
Pallid sturgeon (Scaphirhynchus albus)	1	38	Determine effects of problem contaminants on growth, survival, and reproduction of pallid sturgeon	Unknown	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Environmental Protection Agency, USFWS Regional Office 8, USFWS Regional Office 3, USFWS Regional Office 4, U.S. Fish and Wildlife Regional Office 6, USFWS Research Stations and Coop. Research Units	Research: Environmental Contaminants	Labor type not yet selected	
Pallid sturgeon (Scaphirhynchus albus)	1	39	Identify all point and nonpoint sources of problem contaminants along the Missouri and Mississippi Rivers within the pallid sturgeon's range	Unknown			U.S. Fish and Wildlife Service, Ecological Services Division, Environmental Protection Agency, USFWS Regional Office 3, USFWS Regional Office 4, U.S. Fish and Wildlife Regional Office 6	Research: Environmental Contaminants	Labor type not yet selected	

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Pallid sturgeon (Scaphirhynchus albus)	1	4	Restore large woody debris to the main stem Missouri and Mississippi Rivers and their larger tributaries	Not Started	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Missouri Department of Conservation, Bureau of Reclamation, Corps of Engineers, USFWS Regional Office 3, USFWS Regional Office 4, U.S. Fish and Wildlife Regional Office 6, USFWS Fisheries and Federal Aid, Mississippi Interstate Cooperative Resource Agreement, State Fisheries or Research Divisions	Acquisition: Management Agreement	Labor type not yet selected	Local communities could benefit and provide cost-share funding
Pallid sturgeon (Scaphirhynchus albus)	1	40	Determine causes of hybridization	Ongoing Current	Prior to FY 1995		Corps of Engineers, USFWS Regional Office 3, USFWS Regional Office 4, U.S. Fish and Wildlife Regional Office 6, USFWS Fisheries and Federal Aid	Research: Genetics	Labor type not yet selected	
Pallid sturgeon (Scaphirhynchus albus)	1	41	Develop a pallid sturgeon propagation plan	Complete	Prior to FY 1995	FY 2006	U.S. Geological Survey, Missouri Department of Conservation, U.S. Fish and Wildlife Service, Fisheries Resource Division, USFWS Regional Office 3, USFWS Regional Office 4, U.S. Fish and Wildlife Regional Office 6, State Fisheries or Research Divisions	Management: Propagation	Labor type not yet selected	

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Pallid sturgeon (Scaphirhynchus albus)	1	42	Develop a pallid sturgeon stocking plan and plan for disposition of surplus fish	Complete	Prior to FY 1995	FY 2006	U.S. Fish and Wildlife Service, Ecological Services Division, USFWS Regional Office 3, USFWS Regional Office 4, U.S. Fish and Wildlife Regional Office 6, USFWS Fisheries and Federal Aid, Mississippi Interstate Cooperative Resource Agreement, State Fisheries or Research Divisions	Management: Reintroduction	Labor type not yet selected	Range-wide stocking plan is complete, but is evaluated annually to insure targets are accurate
Pallid sturgeon (Scaphirhynchus albus)	1	43	Develop a tagging protocol for stocked fish	Complete	Prior to FY 1995	FY 2006	U.S. Fish and Wildlife Service, Ecological Services Division, USFWS Regional Office 3, USFWS Regional Office 4, U.S. Fish and Wildlife Regional Office 6, USFWS Fisheries and Federal Aid, Mississippi Interstate Cooperative Resource Agreement, State Fisheries or Research Divisions	Management: Reintroduction	Labor type not yet selected	Tagging protocol is complete but can be updated as new techniques are developed.
Pallid sturgeon (Scaphirhynchus albus)	1	44	Provide financial support to hatcheries for structural modifications, operation, and maintenance needed for a pallid sturgeon	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Western Area Power Administration, Missouri Department of Conservation, Bureau of Reclamation , Corps of Engineers, USFWS Regional Office 3, USFWS Regional Office 4, U.S. Fish and Wildlife Regional Office 6, USFWS Fisheries and Federal Aid	Management: Propagation	Labor type not yet selected	COE, BR, R3, R4, R6, and WAPA have provided funding to improve infrastructure. O&M is still necessary

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Pallid sturgeon (Scaphirhynchus albus)	1	45	Determine protocol for collecting, handling, and transporting pallid sturgeon	Complete	Prior to FY 1995	FY 2006	U.S. Fish and Wildlife Service, Ecological Services Division, USFWS Regional Office 3, USFWS Regional Office 4, U.S. Fish and Wildlife Regional Office 6, USFWS Fisheries and Federal Aid, State Fisheries or Research Divisions	Management: General	Labor type not yet selected	Handling protocol is completed, but is reviewed and updated as new techniques are developed.
Pallid sturgeon (Scaphirhynchus albus)	1	46	Determine efficient, effective spawning techniques in the hatchery and in the field	Complete	Prior to FY 1995	FY 1995 - FY 1999	Missouri Department of Conservation, USFWS Regional Office 8, U.S. Fish and Wildlife Regional Office 6, USFWS Fisheries and Federal Aid, USFWS Research Stations and Coop. Research Units	Research: Propagation	Labor type not yet selected	Spawning techniques are developed. Improvement to those techniques are continuous
Pallid sturgeon (Scaphirhynchus albus)	1	47	Establish a clearinghouse for collection and dissemination of research and management information	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, USFWS Regional Office 3, USFWS Regional Office 4, U.S. Fish and Wildlife Regional Office 6, USFWS Fisheries and Federal Aid, Mississippi Interstate Cooperative Resource Agreement, State Fisheries or Research Divisions	Other: Information and Education	Labor type not yet selected	Information is disseminated via email, FTP site and other forms of media

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Pallid sturgeon (Scaphirhynchus albus)	1	48	Communicate sturgeon recovery efforts	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Western Area Power Administration, Bureau of Reclamation , Corps of Engineers, USFWS Regional Office 3, USFWS Regional Office 4, U.S. Fish and Wildlife Regional Office 6, USFWS Fisheries and Federal Aid, Mississippi Interstate Cooperative Resource Agreement, State Fisheries or Research Divisions	Other: Information and Education	Labor type not yet selected	Recovery activities are disseminated through local and national media outlets as well as via email, personal conversations, and updates.
Pallid sturgeon (Scaphirhynchus albus)	1	49	Establish and fund a full-time position to serve as pallid sturgeon recovery coordinator	Partially Complete	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Bureau of Reclamation , Corps of Engineers, U.S. Fish and Wildlife Regional Office 6, USFWS Fisheries and Federal Aid, Mississippi Interstate Cooperative Resource Agreement, State Fisheries or Research Divisions	Management: General	Labor type not yet selected	This position has been created, but is not funded. Currently recovery coordination is another duty as assigned to an existing position.
Pallid sturgeon (Scaphirhynchus albus)	1	5	Restore the dynamic equilibrium of sediment transport within the Missouri River	Unknown			U.S. Fish and Wildlife Service, Ecological Services Division, Western Area Power Administration, Environmental Protection Agency , Bureau of Reclamation , Corps of Engineers, U.S. Fish and Wildlife Regional Office 6, USFWS Fisheries and Federal Aid	Management: Habitat Maintenance and Manipulation	Labor type not yet selected	Costs unknown until implementation of Task 2.2.4

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Pallid sturgeon (Scaphirhynchus albus)	1	50	Develop a long-term strategy for funding sturgeon recovery activities	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Federal Energy Regulatory Commission, Western Area Power Administration, Bureau of Reclamation , Corps of Engineers, USFWS Regional Office 3, USFWS Regional Office 4, U.S. Fish and Wildlife Regional Office 6, USFWS Fisheries and Federal Aid, Mississippi Interstate Cooperative Resource Agreement, State Fisheries or Research Divisions	Management: General	Labor type not yet selected	Strategy for long-term funding is implemented through the Missouri River Biological Opinion, USFWS base funds, and WAPA contributions.
Pallid sturgeon (Scaphirhynchus albus)	2	51	Provide cultured pallid sturgeon to aquaria and comparable facilities where they can be viewed by the public	Ongoing Current	FY 1995 - FY 1999		Missouri Department of Conservation, USFWS Regional Office 3, USFWS Regional Office 4, U.S. Fish and Wildlife Regional Office 6, USFWS Fisheries and Federal Aid	Management: Other	Labor type not yet selected	Covered by agencies
Pallid sturgeon (Scaphirhynchus albus)	2	52	Map existing areas providing important habitat requirements	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Bureau of Reclamation , Corps of Engineers, USFWS Regional Office 3, USFWS Regional Office 4, U.S. Fish and Wildlife Regional Office 6, USFWS Fisheries and Federal Aid	Research: Habitat Requirements	Labor type not yet selected	Mapping is conducted as funding permits.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Pallid sturgeon (Scaphirhynchus albus)	2	53	Determine reliable, nonlethal aging techniques	Ongoing Not Current	Prior to FY 1995		USFWS Regional Office 8, USFWS Regional Office 3, USFWS Regional Office 4, U.S. Fish and Wildlife Regional Office 6, USFWS Fisheries and Federal Aid, USFWS Research Stations and Coop. Research Units	Management: General	Labor type not yet selected	Various aging techniques have been employed with varying degrees of accuracy and lethality. Continued exploration is important to better understand population demographics.
Pallid sturgeon (Scaphirhynchus albus)	2	54	Develop pilot projects on selected dams to transport sediment past the dam and into the river reaches downstream	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Bureau of Reclamation, Corps of Engineers, U.S. Fish and Wildlife Regional Office 6	Management: Habitat Maintenance and Manipulation	Labor type not yet selected	
Pallid sturgeon (Scaphirhynchus albus)	2	55	Determine the need for fish bypass facilities	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Bureau of Reclamation, Corps of Engineers, U.S. Fish and Wildlife Regional Office 6	Research: Habitat Requirements	Labor type not yet selected	Several facilities have been identified for bypass options. Implementation of a bypass structure at Intake Dam on the Yellowstone River is a high priority project. BR is seeing design options.
Pallid sturgeon (Scaphirhynchus albus)	2	56	Determine the impact of sturgeon commercial and sport fishing on pallid sturgeon	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, USFWS Regional Office 3, USFWS Regional Office 4, U.S. Fish and Wildlife Regional Office 6, USFWS Fisheries and Federal Aid, Mississippi Interstate Cooperative Resource Agreement, State Fisheries or Research Divisions	Research: Population Surveys	Labor type not yet selected	Commercial fishing is impacting pallid sturgeon via unintentional and illegal harvest. The extent has not been quantified.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Pallid sturgeon (Scaphirhynchus albus)	1	6	Restore free movements of pallid sturgeon within high priority recovery areas	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Western Area Power Administration, Missouri Department of Conservation, Bureau of Reclamation , Corps of Engineers, USFWS Regional Office 3, USFWS Regional Office 4, U.S. Fish and Wildlife Regional Office 6, USFWS Fisheries and Federal Aid, Mississippi Interstate Cooperative Resource Agreement, State Fisheries or Research Divisions	Management: Habitat Maintenance and Manipulation, Management: Land Use, Management: Planning, Management: Population Monitoring, Research: Ecosystem Studies, Research: Habitat Requirements, Research: Habitat Status	Contract, Internal Field Assistance, Internal Technical Assistance, Species Expert	Costs unknown
Pallid sturgeon (Scaphirhynchus albus)	2	6-1	Restore fish passage at T&Y Dam, Tongue River, Montana	Complete	FY 2000 - FY 2004	FY 2008	Bureau of Reclamation , USFWS Fisheries and Federal Aid	Management: Habitat Maintenance and Manipulation	Labor type not yet selected	The Tongue River is a tributary to the Yellowstone River and passage at this structure will help restore habitat connectivity.
Pallid sturgeon (Scaphirhynchus albus)	2	6-2	Restore Fish Passage at Intake Dam, Yellowstone River.	Ongoing Current	FY 2000 - FY 2004		Bureau of Reclamation , Corps of Engineers	Management: Habitat Maintenance and Manipulation, Management: Identify/Protect Foraging, Breeding and Mig Habitats	Contract, Internal Administrative, Internal Field Assistance	Installation of a modified water-control structure is underway. When completed, this structure will accomodate fish screens to prevent entrainment.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Pallid sturgeon (Scaphirhynchus albus)	1	7	Ensure Federal Agencies conduct section 7 consultations on all Federal actions that may affect pallid sturgeon	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, U.S. Federal Energy Regulatory Commission, Western Area Power Administration, Environmental Protection Agency , Bureau of Reclamation , Corps of Engineers, USFWS Regional Office 3, USFWS Regional Office 4, U.S. Fish and Wildlife Regional Office 6	Other: Regulations	Labor type not yet selected	Costs dependent upon numbers of consultations
Pallid sturgeon (Scaphirhynchus albus)	1	8	Establish, maintain, and disseminate section 7 biological opinions evaluating impacts on pallid sturgeon	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, USFWS Regional Office 3, USFWS Regional Office 4, U.S. Fish and Wildlife Regional Office 6	Other: Regulations	Labor type not yet selected	
Pallid sturgeon (Scaphirhynchus albus)	2	9	Determine the diagnostic characteristics to distinguish between eggs of sturgeon and paddlefish species	Unknown			USFWS Regional Office 8, U.S. Fish and Wildlife Regional Office 6, USFWS Research Stations and Coop. Research Units	Research: Propagation	Labor type not yet selected	Early efforts were made to develop these tools. However, at this time it is still not easy to differentiate among the sturgeon species.